

Remarks

Upon entry of the instant Amendment, claims 1-28 will be pending in the application for the Examiner's review and consideration.

Claims 15, 16, and 21 have been amended herein to include the limitation "having a microstructure composed of degenerate upper bainite of more than 70%" in line with the amendments made previously to claims 1-14 directed to a steel plate for ultra-high-strength linepipe having excellent low-temperature toughness (*see* amendment dated June 10, 2009). Claims 17-20 and 22 depend, either directly or indirectly, from claims 15, 16 and 21, and therefore each include the limitations of claims 15, 16 and 21. Support for the amendment can be found at paragraphs [0078] and [0084] of the published application. Dependent claims 3, 11 and 17 have been amended to be independent claims.

New claims 23-28 have been added. Support for the new claims is found at paragraph [0108] and Table 1, e.g. Steel D of the published application.

Accordingly, no new matter has been added.

Claim rejection under 35 U.S.C. §103

In the final office action and the advisory action, claims 1-22 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,634,988 to Kurebayashi, et al. ("US '988") alone or in view of CA 2,429,439 ("CA '439") for the reasons stated in the final office action dated March 13, 2009.

According to the specification, addition of Si in an amount over 0.6% significantly deteriorates the toughness of the HAZ and field weldability. To achieve the presently claimed steel plate having excellent low-temperature toughness, the upper limit for Si is set at 0.6% (*see* paragraph [0108] and Table 1 of the published application).

On the contrary, US '988 discloses that Si is indispensable for improving fatigue strength by strengthening the micro-structure and reducing stack-fault energy (*see*, US '988 at col. 6, lines 15-25). US '988 describes adding to the high tensile welded steel plate 0.6 to 2.0% of Si. According to US '988, when the Si content is less than 0.6%, the effect of solid-solution strengthening and stacking fault energy reduction is so small that an improvement in fatigue strength cannot be expected (*see* US '988, column 6, lines 26-36). Therefore, US '988 does not teach or suggest limiting the Si content in a steel plate to not more than 0.60% as recited in the present claims. US '988 does not teach or suggest that addition of more than 0.60% of Si significantly deteriorates the toughness of the HAZ and field weldability. Base

on the teachings of US '988, a person skilled in the art would not have expected or predicted that a steel containing not more than 0.6% of Si is desirable. A person skilled in the art would not have expected or predicted that limiting the Si content to not more than 0.6% would be critical to achieve a steel plate having excellent low-temperature toughness. Therefore, for at least the above reasons, US '988 cannot render claims 1-22 obvious.

CA '439 has been discussed in detail previously in the Amendment filed on January 8, 2009. For example, CA '439 does not disclose or suggest obtaining an upper bainite structure and a production process according to the present invention. In particular, CA '439 does not disclose or suggest that the microstructure is composed of degenerate upper bainite of more than 70%. As discussed previously, the present invention utilizes degenerate upper bainite for balancing the HAZ portion of the linepipe at the weld site with a longitudinal direction strength of the linepipe mother material, and lowering a longitudinal direction strength against a peripheral direction strength. These effects cannot be attained by the martensite-bainite structure described in CA '439. *See* Amendment dated January 8, 2009.

Therefore, the rejection of claims 1-22 under 35 U.S.C. § 103(a) over US '988 alone or in view of CA '439 cannot stand and Applicants respectfully request withdrawal of the rejection.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the present application is in condition for allowance. Early and favorable action by the Examiner is earnestly solicited. If the Examiner believes that issues may be resolved by a telephone interview, the Examiner is invited to telephone the undersigned at the number below.

Respectfully Submitted,

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